

ABSTRACT

The present invention provides a novel method for electrical connection between a polymer PTC device and a metal lead element to thereby prevent the problems of the connection by caulking or soldering. For this purpose, the present invention provides a process for producing a connection structure by laser welding, said connection structure having (A) a PTC device (10) including (i) a laminar polymer PTC element (12) and (ii) a metal foil electrode (14) disposed on a main surface of the laminar polymer PTC element (12), and (B) a metal lead element (20) electrically connected to the metal foil electrode. The metal foil electrode (14) has at least two metal layers, one of which, the X-th layer, has laser beam absorption $a\%$ that is the lowest among the metal layers of the metal foil electrode (14). The X-th layer is present between a first metal layer (18), of the metal foil electrode and the laminar polymer PTC element (12). First metal layer (18) is located farthest from the laminar polymer PTC element (12) and has a laser beam absorption of $b\%$, where $b > a$.